

**GLASS COMPOSITE MATERIAL AND PRODUCTION THEREOF**

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Inventor(s): KIMURA KUNIO; IMOTO KIYOAKI; OMUKAE YOSHIZO

Applicant(s): MATSUSHITA ELECTRIC IND CO LTD

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Abstract of JP 4046036 (A)

**PURPOSE:**To enable seal bonding to a substrate of a metal having a high coefft. of thermal expansion such as Al, Al alloy, Cu or Cu alloy by dispersing powder of a metal having a higher coefft. of thermal expansion than a glassy matrix in the matrix. **CONSTITUTION:**A glass composite material obtd. by dispersing powder of a metal having a higher coefft. of thermal expansion than glass in powder of the glass is used for seal bonding to a metal substrate. Though the glass used may be selected according to the thermal expandability of the substrate, the pref. coefft. of linear expansion of the glass is  $\geq 120 \times 10^{-6} / ^\circ\text{C}$  because the composite material is characterized by use for seal bonding to a metal substrate having high thermal expandability. The metal having a higher coefft. of thermal expansion than the glass may be Al, Cu or brass. The coefft. of thermal expansion of the composite material is determined by adding the coefft. of thermal expansion of the metal to that of the glass. In accordance with the increase of the amt. of the metal powder added, the coefft. of thermal expansion of the composite material is increased. When the metal powder is added by  $>5\%$ , the flowability of the composite material is reduced, a larger number of metal particles bond to each other, corrosion is liable to occur and insulation resistance is reduced.

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